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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,884	01/10/2001	Shoji Tsuzuki	107927	1918

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EXAMINER

KEBEDE, BROOK

ART UNIT PAPER NUMBER

2823

DATE MAILED: 05/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/671,884

Applicant(s)

TSUZUKI, SHOJI

Examiner

Brook Kebede

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 4, 10 and 16 is/are withdrawn from consideration.
- 5) ☒ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the Group I invention, claim(s) 1-3, 5-9 and 11-15 in Paper No. 9, filed on April 5, 2002, is acknowledged. The traversal is on the ground(s) that "the subject matter of all claims 1-16 is sufficiently related that a through search for the subject matter of any one group of claims would encompass a search for the subject matter of the remaining claims..." This is not found persuasive.

A restriction requirement between one set of product claims and a set of process claims was issued in the Office action of Paper No.7, mailed on March 22, 2002. "Section 121 [of Title 35 USC] permits a restriction for 'independent and distinct inventions,' which the PTO construes to mean that the sets of claims must be drawn to separately patentable inventions." See *Applied Materials Inc. v. Advanced Semiconductor Materials* 40 USPQ2d 1481, 1492 (Fed. Cir. 1996)(Archer, C.J., concurring in-part and dissenting in-part). A product and the process of making the product are "two independent, albeit related inventions." See *In re Taylor*, 149 USPQ 615, 617 (CCPA 1966). "When two sets of claims filed in the same application are patentably distinct or represent independent inventions, the examiner is to issue a restriction requirement." See *In re Berg*, 46 USPQ2d 1226, 1233 n.10 (Fed. Cir. 1998).

The examiner, in issuing a restriction requirement, must demonstrate "one way distinctiveness." *Applied Materials Inc.* at 1492. As stated within the restriction requirement, "inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f))." In this

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application, the examiner restricted the product claims from the process claims on the grounds that “the product as claimed can be made by another and materially different process such as a process wherein instead of forming a metal wire on a base (i.e. a substrate) and applying an insulating material onto the metal layer, a first insulating layer can be formed on a base and patterning in a predetermined distance to form plurality of openings and a first metal layer can be formed in the openings and removing the patterned first insulating and forming a second insulating layer different from the first insulating layer and forming a second metal wire on the second insulating layer in order to form contact with the first metal layer ,” and that, as a result, a restriction was necessary.

Furthermore, a "product-by-process" claim is one in which the product is defined at least in part in terms of the method or process by which it is made. *Atlantic Thermoplastics Co. Inc. v. Faytex Corp.*, 23 USPQ2d 1481, 1488 (Fed. Cir 1992). Claim(s) 4, 10 and 16 are product-by-process claims, product-by-process claims are directed to the product no matter how actually made. *In re Taylor*, 149 USPQ 615, 617 (CCPA 1966). Consequently, it is the patentability of the final product, and not the patentability of the process, that must be determined in a product-by-process claim. *In re Thorpe*, 227 USPQ 964, 966 (CAFC 1985), *Ex parte Edwards* 231 USPQ 981, 983 (BdPatApp&Int 1986).

In addition to one way distinctiveness, the examiner must show “why it would be a burden to examine both sets of claims.” *Applied Materials Inc.* at 1492. “A serious burden on the examiner may be *prima facie* shown if the examiner shows by appropriate explanation either separate classification, separate status in the art, or a different field of search.” MPEP 803. An explanation was provided in the restriction requirement. Specifically, in addition to being

distinct, the examiner indicated that restriction is proper because the product claims and the process claims "have acquired a separate status in the art."

The criteria of distinctness and burdensomeness have been met, as demonstrated hereinabove. Accordingly, the restriction requirement in this application is still deemed proper and is therefore **made FINAL**.

Claims 4, 10 and 16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention, the requirement having been traversed in Paper No 9.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 11-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "the base" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claims 12-15 also rejected as being dependent of the rejected independent base claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

6. Claims 1, 2, 5-7, 9, 11 and 13-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi et al. (US/5,977,641).

Re claim 1, Takahashi et al. disclose a method of manufacturing a connection substrate, comprising steps of: forming a metal wire (11 15) on a base (1) ; applying an insulating material (12) onto the metal wire to form an insulation layer (12); forming another metal wire (13) on the insulation layer (12), thereby connecting the metal wires (11 15 13) which sandwich the insulation layer (12), through a contact hole (17) formed in the insulation layer (12); and separating the metal wires (11 15 13) and the insulation layer (12) from the base (1) (see Figs. 3A-4C).

Re claim 2, as applied to claim 1 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein the step of applying an insulating material onto the metal wire, and the step of forming another metal wire, thereby connecting the metal wires are repeated at least two times (see Figs. 3A-4C).

Re claim 5, Takahashi et al. disclose a method of manufacturing a semiconductor device, comprising: a step of forming a connection substrate on a base, comprising, forming a metal wire

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on a base (11 15), applying an insulating material (12) onto the metal wire (11 15) to form an insulation layer (12), and forming another metal wire (13) on the insulation layer (12), thereby connecting the metal wires (11 15 13) which sandwich the insulation layer (12) through contact hole(17) formed in the insulation layer (12); a step of mounting a semiconductor chip on the metal wire which is bared; and a step of separating the connection substrate from the base (see Figs. 3A – 4C).

Re claim 6, as applied to claim 5 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein a plurality of the semiconductor chips are mounted on the connection substrate (see Figs. 1-4C; Col. 1, line 5 – Col. 3, line 62).

Re claim 7, as applied to claim 5 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein in the step of forming a connection substrate, the step of applying an insulating material onto the metal wire and the step of forming another metal wire, thereby connecting the metal wires are repeated at least two times (see Figs. 3 – 4C)

Re claim 9, as applied to claim 5 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein the base comprises silicon (see Figs. 3 – 4C)

Re claim 11, Takahashi et al. disclose a method of manufacturing a semiconductor device, comprising: a step of forming a connection substrate on the base, comprising, forming a metal wire to be connected to an electrode formed on a semiconductor chip, on a first base, applying an insulating material onto the metal wire to form an insulation layer, and forming another metal wire on the insulation layer, thereby connecting the metal wires which sandwich the insulation layer, through a contact hole formed in the insulation layer; a step of disposing a second base on the connection substrate; a step of separating the first base from the connection

substrate; a step of mounting a semiconductor chip on the metal wire that is a step of separating the connection substrate from the second base (see Figs. 1-4C; Col. 1, line 5 – Col. 3, line 62).

Re claim 13, as applied to claim 11 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein the second base comprises silicon (see Figs. 1-4C; Col. 1, line 5 – Col. 3, line 62).

Re claim 14, as applied to claim 11 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein a plurality of the semiconductor chips are mounted on the connection substrate (see Figs. 1-4C; Col. 1, line 5 – Col. 3, line 62).

Re claim 15, as applied to claim 11 above, Takahashi et al. disclose all the claimed limitations including the limitation wherein in the step of forming a connection substrate the step of applying an insulating material onto the metal, and the step of forming another metal wire, thereby connecting the metal wires are repeated at least two times (see Figs. 1-4C; Col. 1, line 5 – Col. 3, line 62).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US/5,977,641).

Re claim 3, as applied to claim 1 above, Takahashi et al. disclose all the claimed limitations. With regarding the limitation the base substrate comprises glass Examiner takes an

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Official notice because it is well-known in the art to use a glass substrate for packaging. See *In re Malcolm*, 129 F.2d 529, 54 USPQ 235 (CCPA 1942). See *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970).

Re claim 8, as applied to claim 5 above, Takahashi et al. disclose all the claimed limitations. With regarding the limitation the base substrate comprises glass Examiner takes an Official notice because it is well-known in the art to use a glass substrate for packaging. See *In re Malcolm*, 129 F.2d 529, 54 USPQ 235 (CCPA 1942). See *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970).

Re claim 12, as applied to claim 11 above, Takahashi et al. disclose all the claimed limitations. With regarding the limitation the base substrate comprises glass Examiner takes an Official notice because it is well-known in the art to use a glass substrate for packaging. See *In re Malcolm*, 129 F.2d 529, 54 USPQ 235 (CCPA 1942). See *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure Akagawa (US/5,677,576), Kata et al. (US/5,844,304), Nozawa (US/6,181,010), Chakravorty (US/6,181,569), and DeFelice et al. (US/6,190,940) also disclose similar inventive subject matter.

Correspondence

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (703) 306-4511. The examiner can normally be reached on 8-5 Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Brook Kebede

BK
April 27, 2002



Trung Dang
Primary Examiner